

# Attachable compact second harmonics generator



Second harmonic generator SHG attached to Q2

**SHG** is a compact second-harmonic generator with the Q2 and Q2HE series lasers. It offers two configurable output ports, enabling coaxial or separated delivery of the second harmonic via integrated dichroic mirrors. Connected to the laser system, SHG supports remote monitoring and control. Due to the hygroscopic nature of the nonlinear crystals, the module must remain attached to the controller during operation and be stored in a dry environment when unpowered.

## SPECIFICATIONS <sup>1)</sup>

Model	SHG
Conversion efficiency <sup>2)</sup>	> 50 %
Pulse to pulse energy stability <sup>3)</sup>	< 2.5 % RMS
Spectral purity <sup>4)</sup>	> 99 %
Typical pulse duration	10 – 20 % shorter than fundamental
Typical beam diameter	10 – 20 % smaller than fundamental
Beam pointing stability	same as the pump beam
Polarization at Port #1	vertical
Polarization at Port #2	horizontal

### Dimensions

Housing (W×L×H)	153 × 78 × 65 mm <sup>3</sup>
Weight	< 0.5 kg

### Operating requirements

Ambient temperature	15 – 30 °C
Relative humidity	10 – 80 % (non-condensing)
Powering	from laser controller

## CONFIGURATION OPTIONS <sup>5)</sup>

Model	Port #1		Port #2	
	Wavelength <sup>6)</sup>	EM <sup>7)</sup>	Wavelength <sup>6)</sup>	EM <sup>7)</sup>
<b>SHG-0</b>	N/A	N/A	532+1064 nm <sup>8)</sup>	-EM2
<b>SHG-1</b>	1064 nm	-EM1	532 nm	-EM2
<b>SHG-2</b>	532 nm	-EM2	1064 nm	-EM1

# SHG

## FEATURES

- **Compact** attachable **2<sup>nd</sup> harmonic** generator compatible with the Q2 and Q2HE series lasers
- Factory-configurable **two exit ports**
- Microprocessor controlled temperature tuned nonlinear crystal
- Remote monitoring and control via common with laser **Ethernet** interface
- Optional attachable pulse energy monitor

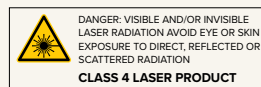
## OPTIONAL EQUIPMENT

- Attachable pulse energy monitor with analog and/or digital output

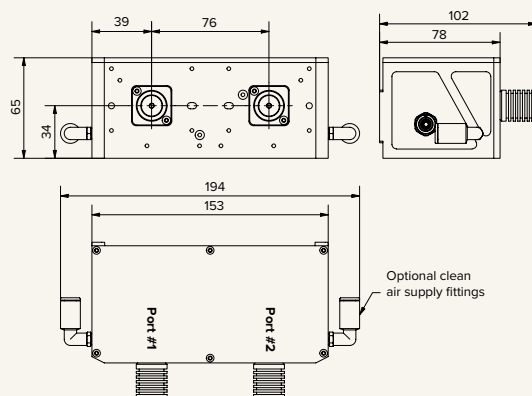
## APPLICATIONS

- Laser wavelength conversion

1. Due to continuous improvements all specifications are subject to change. The parameters marked typical are not specifications. They are indications of typical performance and will vary with each unit we manufacture.
2. Fundamental to second harmonic.
3. When unit is pumped by our Q2 or Q2HE series laser. Measured during 30 seconds operation after warm-up.
4. Spectral purity for second harmonic beam.
5. See Drawings for port number assignment.
6. Wavelength is shown for 1064 nm pump wavelength. For 1053 nm pump wavelength recalculate wavelengths accordingly.
7. Shows compatible pulse energy monitor model. This option is available only when SHG is supplied together with Q2 or Q2HE series laser.
8. Both wavelengths exit Port #2, for separation external dichroic mirror is required.



## DRAWINGS



Outline drawings of SHG second harmonic generator (dimensions in mm)